A Comparitive Study of Interferometric Regridding Algorithms

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Abstract

Interferometric mapping radars ara able to make three dimensional position measurements using two spatially separated antennas and thereby create digital elevation models. The reconstructed position information does not naturally lie in a uniformily sampled ground projection so the data must be resampled on regridded into such a representation. In this paper we describe four methods nearest neighbor, simplical, convolutional and surface fitting methods for regridding the data and compare their noise reduction and resolution preserving properties. Comparisons are made using a combination of simulated data for both artifical and natural scences as well with actual interferometric data from a variety of platforms.